

Using information on the broader economic impact of vaccines in evidence-informed decision making

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Valorisation

In this chapter we discuss the valorization of this dissertation, i.e. “the process of value creation from knowledge, by making it applicable and available for economic or societal utilization” [1]. The goal of the chapter is to provide insight into what this dissertation adds to society. To provide a good overview of what can be done with the results of this dissertation, we discuss for each stakeholder group, what the added value of this dissertation could be, together with the efforts already undertaken to disseminate the knowledge and the additional actions that will be taken. Two groups of stakeholders were identified: 1) the scientific community and 2) policymakers and advisory bodies in high, middle and low income countries.

The scientific community

This dissertation has added value for the scientific community. This group includes researchers in the field of health economics, decision- and policy making, and those researching (the economic impact of) vaccination.

What this dissertation adds

The outcomes of our research add several new insights which can be important for the scientific community.

First, our research has shown that taking the broader perspective (i.e. the societal perspective) into account is still not common in economic evaluations. Comparing the outcomes of studies that include a broader perspective with those that exclude it could provide a further understanding of the impact of using a broader perspective. It could also further enhance the optimization of economic evaluation research in general and the optimization of cost-effectiveness research on immunization specifically. Moreover, extending such research to areas outside immunization could offer the possibility of developing a tailor-made and standardized framework for including the broader perspective in different areas and for different interventions.

Second, we saw that if researchers choose to use the societal perspective, there is a need to clearly explain the interpretation of this perspective as it is applied in any particular study. Moreover, explaining how the perspective relates to the specific policy question and indicating the rationale of why certain costs were included or excluded would add validity to future economic studies.

Third, our research shows that the methodology used in this field of research needs further attention, especially the use of mixed methods approach to reach stakeholders effectively. Moreover, our results show that a case study approach and the combined use of stated and revealed preferences can provide in-depth insights into the role of

economic information in decision making on vaccines. The methods and frameworks used in our studies can form the basis for additional case studies on other types of vaccines and/or vaccines in other countries. Furthermore, the methods and frameworks can be adapted for analyzing decision making in other areas, particularly now that more focus is being directed towards the concept of health in all policies [2, 3].

Efforts made to disseminate this knowledge

Several efforts have been undertaken to disseminate these new insights. As can be seen in the publication list, we presented the results of our studies at several international and national conferences and meetings. For example, the preliminary results of Chapter 5 (a case study on the introduction of HPV vaccination in the Netherlands) were presented at the symposium of the Dutch Association of Health Technology Assessment (NVTAG). We were also invited to present our work at several expert meetings (including World Health Organization (WHO)-supported meetings in Toronto, Geneva, Bangkok and Boston between 2012-2017) on the broader economic impact of vaccines, where, as part of an international team, we shared our results, discussed possible future research and wrote new research proposals. We have, for instance, contributed to the proposal on the “The use of economic information in the decision-making process of NITAGs in Asia” proposing social network analysis for analyzing the networks of national immunization technical advisory groups, in collaboration with the Center for Disease Control and Prevention (CDC), the WHO and the International Vaccine Institute (IVI).

In addition, we published most of our papers in peer-reviewed open access journals to make our results easily available to the research community. We also used our results in educational activities at Maastricht University in the Netherlands.

Additional actions to be taken

However, some actions can still be undertaken to further inform the scientific community. First, we are still in the process of getting Chapter 5 published in a peer-reviewed journal. Second, we plan to make this dissertation publicly available online to the scientific community. Third, we are planning to publish summaries of this dissertation in the Immunization Economics Newsletter and the newsletters of professional bodies in the Netherlands (such as the NVTAG, Health Economic Study Group (VGE)) and internationally, for example, in the newsletter of the International Society for Pharmacoeconomics and Outcomes Research (ISPOR).

Policy makers and advisory bodies

The findings of this dissertation can also be of major interest for policy makers and advisory bodies. These include national immunization technical advisory groups (NITAGs), reimbursement institutes (such as ZiNL in the Netherlands), policy makers and employees of the ministries of health and ministries of finance in low, middle and high income countries. Furthermore, our results can be of particular interest to international agencies, donors and advisory bodies for low and middle income countries; these bodies include the World Health Organization (WHO), the Bill and Melinda Gates Foundation, United Nations International Children's Emergency Fund (UNICEF) and Médecins Sans Frontières (MSF).

What this dissertation adds

Several results found in this dissertation can be of interest for the policy makers and advisory bodies identified above.

First, we found twenty-three possible economic impacts among four domains that can be relevant for decision making on the introduction of a vaccine. Decision makers can use these as a checklist to see if the information provided (e.g. the results of economic evaluations on the impact of vaccines) for supporting decision making is complete.

Second, this dissertation creates awareness that there may be other relevant costs besides healthcare costs. The inclusion or exclusion of information on such costs could lead to different decisions, in particular for decisions that transcend the healthcare sector [4]. In these cases, looking only at the narrow economic impacts of vaccines will be insufficient [5]. As explained in Chapter 6, the current state (looking only at the economic impact of a particular vaccine) is insufficient for two reasons. First, mandatory vaccination programmes sometimes lack public funding, resulting in out-of-pocket payments by households and/or budget deficiencies in both high income and low and middle income countries [6-8]. Second, many of the low income countries which were at first eligible for funding from overseas development aid and/or international donors are now graduating from that support as a result of economic prosperity, and need to secure domestic resources [9]. In these situations, including the broader economic impacts of vaccines could be useful in convincing ministries of finance and/or national treasuries to invest more in health care in general [4].

Efforts made to disseminate this knowledge

Several efforts have already been undertaken to disseminate the issues presented above to policy makers and advisory bodies. First of all, we purposefully choose to publish most results in open access journals as policy makers and advisory bodies, especially in low- and middle income countries, do not always have access to paid

journals. Second, in the expert meetings in which we presented our results policy makers from different countries, including low and middle income countries, were present. The preliminary findings in Chapter 2, for instance, were presented at the first expert meeting, held in Canada, on the broader economic impact of vaccination. One of the foundations for the development of a new framework with regard to vaccination was laid during this meeting. We also interviewed and held a survey among the participants (including policy makers and advisory bodies) of the new and underutilized vaccine initiative (NUVI) meeting. We also shared our results with specific institutions, such as the Dutch National Institute for Public Health and the Environment (RIVM) and Supporting Independent Immunization and Vaccine Advisory Committees (SIVAC). Third, the collaboration with the WHO and indirectly with other international stakeholders such as the Global Alliance for Vaccine Introduction (Gavi Alliance), and UNICEF, among others, provided us with an important link with policy makers from low and middle income countries and provided insights into their needs and enabled us to share our results via their networks.

Additional actions to be taken

We intend to send copies of this dissertation to the stakeholders identified earlier, to make them aware of our findings. The list of stakeholders includes both individual persons and organizations, such as the RIVM, National Healthcare Institute (ZiNL), the health council for the Netherlands, as well as the WHO, the Bill and Melinda Gates Foundation, UNICEF, SIVAC, HITAP, CDC, IVI, and other organizations. We also intend to send a summary of the dissertation to *Vaccines and Global Health: The Week in Review*, which is sent each week to professionals from “public health, clinical practice, government, NGOs and other international institutions, academia and research organizations, and industry” to update them on “news, events, announcements, articles and research in vaccine and global health ethics and policy space [10].”

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